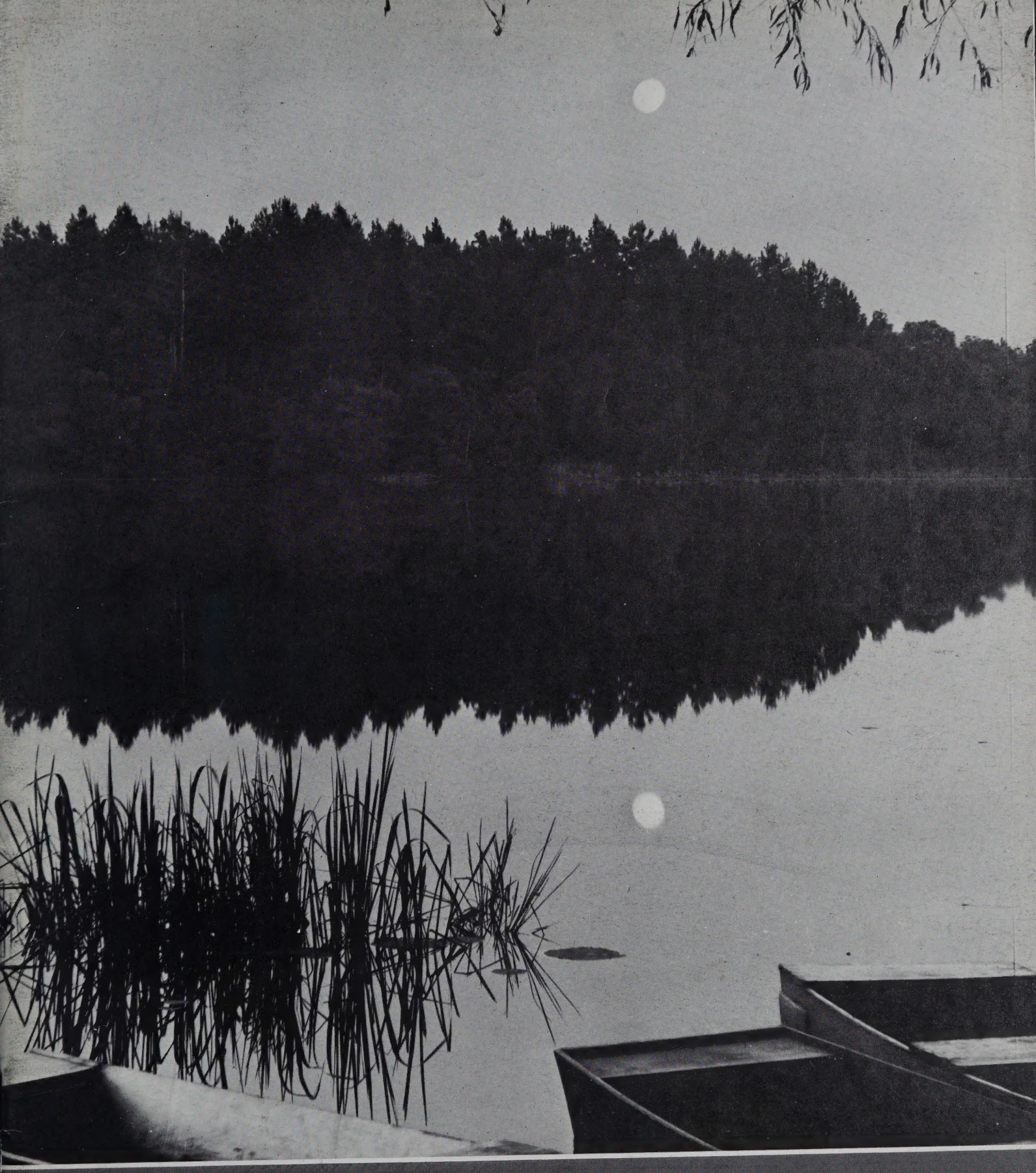

Texas Highways

April 1964

On Friday morning, February 21, Austinites awoke to a world of white. During the night an unheralded storm covered the capital city with a blanket of thick, fluffy snow. Willis Albarado caught this novel view of the Texas Highway Department main building sheathed in snow.

Texas Highways

April 1964

Volume II • Number 4

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About Our Cover

No, it's not trick photography designed for an April Fool's cover. It's simply a unique angle of reflection of boats and moonrise on Ratcliff Recreational Center Lake in Davy Crockett National Forest in District 11 west of Lufkin. And somehow, the very uniqueness of the scene captures the romance of spring in early April.

Not by Engineers Alone

Every day we are made more aware of the emphasis being placed on the role of the most modern tools and methods in highway construction; in fact, throughout industry.

We may be proud that engineers of the Texas Highway Department have been able to meet the challenge of design required by the constantly increasing demands of our exploding population and its resulting traffic requirements.

But the task of these engineers would be extremely difficult — if not impossible — were it not for the marvels of scientific development extending into the highway construction field.

Digital computors, improved materials, massive equipment undreamed of a generation ago are in a large sense responsible for the success of the Texas highway construction story. Because of these we now cut through mountains instead of going around them, we erect towering bridges and seemingly endless causeways where none stood before, and we move record numbers of vehicles at record speeds through congested areas.

But as we look at the majesty of accomplishments which challenge the imagination of today we cannot but wonder what the morrow will bring. Like Alexander, will we feel we have no more worlds to conquer?

And then, as we ponder, there is a sudden humbling thought: As centuries ago the Seven Wonders of the World began as dreams, still our wonders of today are but the accomplishments of man, given form and substance by human hands.

No dream, no vision, no engineering marvel of the Texas Highway Department ever was brought to completion without hands. The thousands of construction workers, stenographers, draftsmen, maintenance personnel, administrative and office workers — all contribute their respective talents to the building of every bridge, every highway.

The Texas Highway Department is not composed alone of engineers.

They represent an important segment of the organization, but so do all the others — each in his or her specific field. Each is interdependent upon the other; none could build our modern highways singlehandedly.

We are a team — and as a team we all may be proud of the accomplishments of the Texas Highway Department.

Sometimes we of the Highway Department tend to see the products of our work, the bridges and highways, with a cold eye. We see them as engineering projects of steel and concrete. But sometimes we need to be reminded that a city can wrap its vitality and atmosphere around a stark new structure and give it warmth and character.

Grady Phelps, a reporter for the Corpus Christi Caller-Times, has written a story, with simple poetic abandon, which recalls to us how much a bridge can come to mean to the people of a city. Here are some excerpts from his story.

The View from the Bridge

JUST ABOUT everyone knows it as the high bridge.

And it is 1,255 steps, give or take a few paces, from the closest entrance at North Broadway to its top.

To most it is a magnificent man-made thing of beauty. A sort of jeweled crown arising as if out of the sea.

Some like to walk it for the exercise, but not many. Others have to walk it, sometimes daily, because they are carless or can't afford bus or taxi fare. A few even hike it for a lark.

But on a sunny day a view from its summit can be quite a treat.

"I like to walk up there because the air is clean," said one climber.

One of the first things that strikes you as you ascend is the enormity of everything—the port, the bay, the city. There is an inkling of just how tiny Jack must have seemed to the Giant at the end of the bean stalk.

How funny things appear from the upside down. Buildings, houses, cars, people and boats all become so miniature. There is the "new" look of things you never thought much about before like the patterns of rooftops, each one so different, and the way a puffing freighter's smokestack looks from a bird's-eye view.

There is the weird feeling of the slight up-down sway of the bridge in the wind. And you hear the whistling of the stiff breezes through the big steel girders.

There is the uneasiness in your stomach after looking down and finding yourself wondering, "What if I fell?"

Big trucks groan under heavy loads as they drop from gear to gear in that slow, hard climb . . . cars speed past on the six wide lanes. Looking downward you see the many shades of the water—dark and light greens, browns and yellowish tints of the sand at the water's shallow edge. You wonder at the looping dives and graceful glides of a seagull flying so high yet so far below. Above the cloud formations seem somehow more interesting . . . and you make a mental note to come up some time and watch a blue norther blow in.

There is the kaleidoscopic way a tugboat's props kick up mushrooms of silt from the harbor floor and the wave movement in a speedboat's wake.

Officially, the sparkling span has been a photographic landmark since October 1959. That's when it was christened Corpus Christi Harbor Bridge. But the longer name never really replaced "the high bridge."

It can be a strangely lonely place at the top. Even with hundreds of cars whizzing by, it can be a retreat away from it all. A rare patch of isolation in the heart of a throbbing, rushing city. ■

A Sno-Go plow widens high drifts on U.S. 60 and 66 at the east city limits of Amarillo. Surrounding districts extended assistance to District 4 personnel in their efforts to keep the roads open during the week-long siege of snow.

George Dewald, District Construction Engineer, left, and Clarence Shanks, Accountant I, "break trail" at Amarillo.

THE BLIZZARD OF '64

Richard C. Crandall, Senior Laboratory Engineer
Amarillo, District 4

MONDAY, FEBRUARY 3, began as just another cold, misty morning in the Texas Panhandle. By 8 a.m. falling and freezing moisture had formed a sheet of ice on highways, bridges, and city streets. The falling moisture then changed from rain to snow, marking the beginning of the toughest snow removal job ever experienced in this area.

Maintenance snow equipment throughout the district began to move out as the storm developed. Road blocks on all main highways were set up and manned by office and engineering personnel who advised, directed, or turned back travelers, depending on the immediate situation.

The blowing snow continued.

By Tuesday night, the only highway open in District 4 was U.S. 87 from Amarillo toward Lubbock, and it was extremely hazardous. All schools had closed and would remain closed, and most non-essential businesses were closed.

Offers of assistance were received from the surrounding highway districts which we accepted gratefully. District 3, Wichita Falls, sent a maintainer and truck with operators; District 8, Abilene, sent two maintainers and two trucks with operators; District 5, Lubbock, contributed four Sno-Gos, three V-Plow maintainers, and 14 snow plow trucks with operators and field mechanics; District 25, Childress, dispatched two Sno-Gos, eight V-Plow maintainers and 14 snow plow trucks with operators and field mechanics. Supervisory personnel accompanied some of this equipment.

Contractors in the area were contacted and arrangements were made to lease about 40 pieces of equipment, including maintainers, bulldozers, front end loaders, and winch trucks. The contractors supplied operators for all their equipment. Bulldozers obtained under the lease proved to be invaluable during the last part of the storm since certain sections of road could be cleared by no other type of equipment.

Wednesday morning the snow had ceased. Hopes were raised, and by nightfall some roads were open, including all main roads out of Amarillo. However, this proved to be just a lull in the battle.

High winds and more snow began Wednesday night and continued until Thursday evening. This new storm closed all roads again, except for U.S. 87 south of Amarillo.

By this time a near record snowfall of 17 to 28 inches had covered the district. It appeared that most of the snow had found its final resting place between the right of way fences on our highways.

Continued efforts by the snow removal crews opened most main highways by Friday afternoon, though many were one-way traffic and hazardous. All Farm to Market roads were open, at least for one-way traffic by Sunday noon, February 9. Snow removal operations continued through Saturday, February 15. These last operations were performed mostly by the heavier equipment, moving drifts back from the edge of pavements and moving snow off of paved shoulders.

During the first week of this storm, the Highway Department had approximately 175 pieces of snow-removing equipment in operation, not including leased equipment. More than 500 Highway Department employes manned snow plows, road blocks, two-way radios, and telephone switchboards during the week. The district office, district shop, district warehouse, all maintenance offices and warehouses, and several resident engineers offices were open on a 24-hour-a-day basis from Monday, February 3 to Sunday evening, February 9.

Our thanks goes to all the cities, counties, law enforcement agencies, commercial firms, and individual citizens, who, without thought of remuneration, pitched in and helped clear roads and cared for stranded motorists. Without their help and cooperation, the job could not have been done.

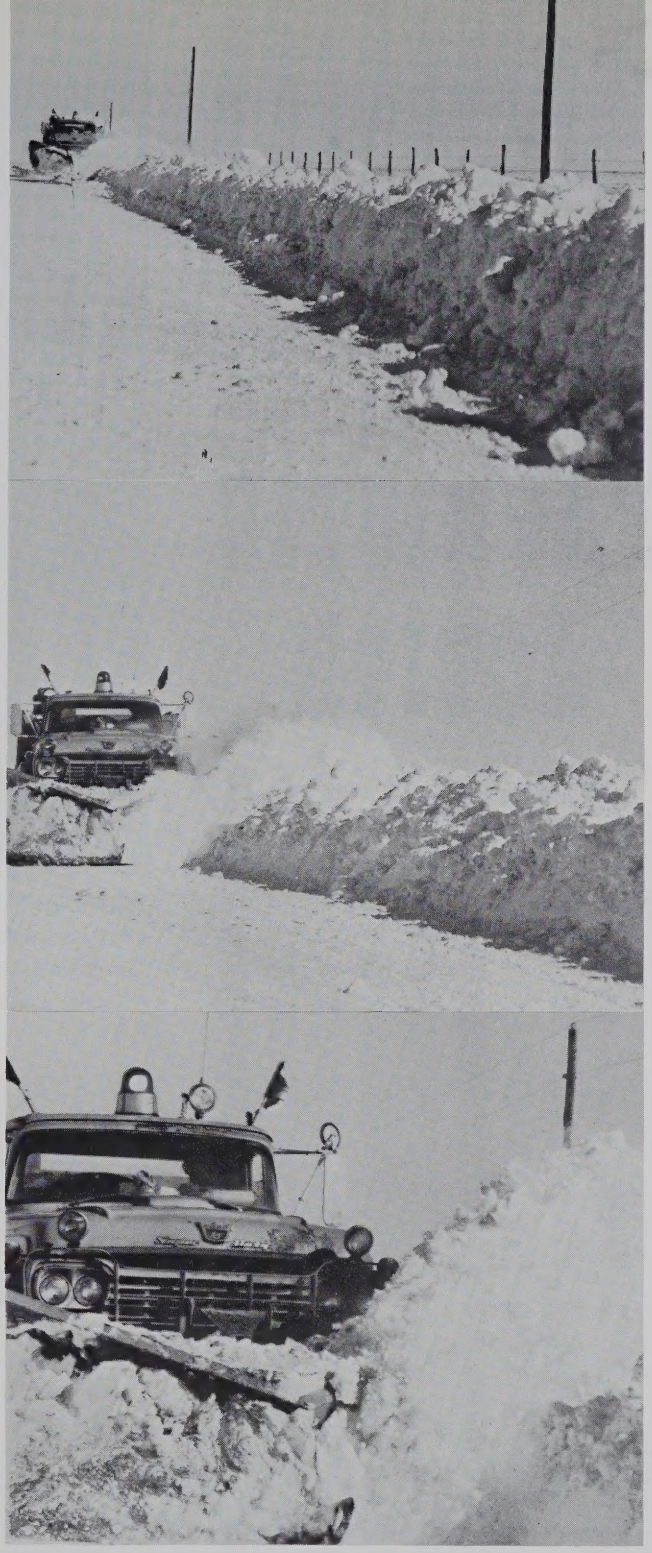
In particular, the Department of Public Safety aided in keeping order and handling emergency situations, the county crews helped remove snow while they moved from road to road, and the trucking firms and oil field companies cleared snow and helped stranded travelers. It was good to see that the old Southwestern tradition of helping folks in need is still very much alive.

Damage to highways and streets in the area was heavy. Much of it was apparent, with more of it still hidden in water-logged roadways. Final estimates of damage will not be possible until after the last freeze-thaw cycle this spring.

Generally speaking, the end result of the storm was good. Area farmers and ranchers received an abundance of much needed moisture, and business people expect an upswing in sales. The fact that temperatures during the blizzard stayed relatively mild prevented loss of livestock and possible loss of life among stranded motorists.

We think this story is the perfect ending for this account of the blizzard:

Extreme fatigue sometimes causes a person to say or do odd things. During an emergency period, two-way radio units are in constant use. Most Texas Highway Department equipment has mobile two-way radio with a specific call number assigned to each vehicle. One man returned home after spending the better part of four days and nights in such a radio-equipped car during the storm. His wife tells us that at the end of his bedside prayer, instead of the usual "Amen," the tired fellow mumbled "2413,12-7." ■



Texas Highway Department crews worked around the clock clearing snow from the roads during the snowstorm February 3-9 in the Texas Panhandle. Here the men clear F.M. 297 near Dalhart.

FOR PATRIOTIC ACTION

HIGHWAY DEPARTMENT CITATION—State Highway Engineer D. C. Greer, right, accepts from Major General William R. Calhoun a citation recognizing the Department's cooperation with the U. S. Army Reserve Program. Greer also holds telegrams from commanding officers of the three major army units in Texas.

THE HIGHWAY DEPARTMENT was awarded a citation in February for Departmental cooperation with the U. S. Army Reserve program.

The citation was presented to State Highway Engineer D. C. Greer by Major General William R. Calhoun, commanding general VIII Corps.

General Calhoun said the citation was a move to recognize the "proper and patriotic" action of the Highway Department and other employer organizations in cooperating with the reserve program.

Each year hundreds of Department employes are granted leaves of absence for summer field training and other tours of active duty. Greer acknowledged the "great responsibility" of the reserve program and said, "Even if our employes are called to active duty we take care of them and put them back to work when they return."

The citation was signed by Lieutenant General Carl H. Jark, commander of the Fourth United States Army, Fort Sam Houston. The Department also received telegrams of appreciation from D. E. O'Brien, Col. GS USAR, Chief of Staff; Everett S. Simpson, Major General, 36th Infantry Division; and from George P. Munson, Major General USAR, who is District Construction Engineer in District 12, Houston. O'Brien is commanding officer of the 90th Infantry Division; Simpson heads the 36th Infantry Division; and Munson commands the 75th Manuever Area Command. Ceremonies took place in the Main Building in Austin.

Almost 200 Department personnel were called to active duty in the fall of 1961 during the Berlin Crisis. After their release, they returned to work with the Department. ■

New Boundaries for Cordova Island

READERS WILL recall that last summer in the July issue of *Texas Highways* a story was featured about Cordova Island, an Old Mexico oasis within the city limits of El Paso in District 24.

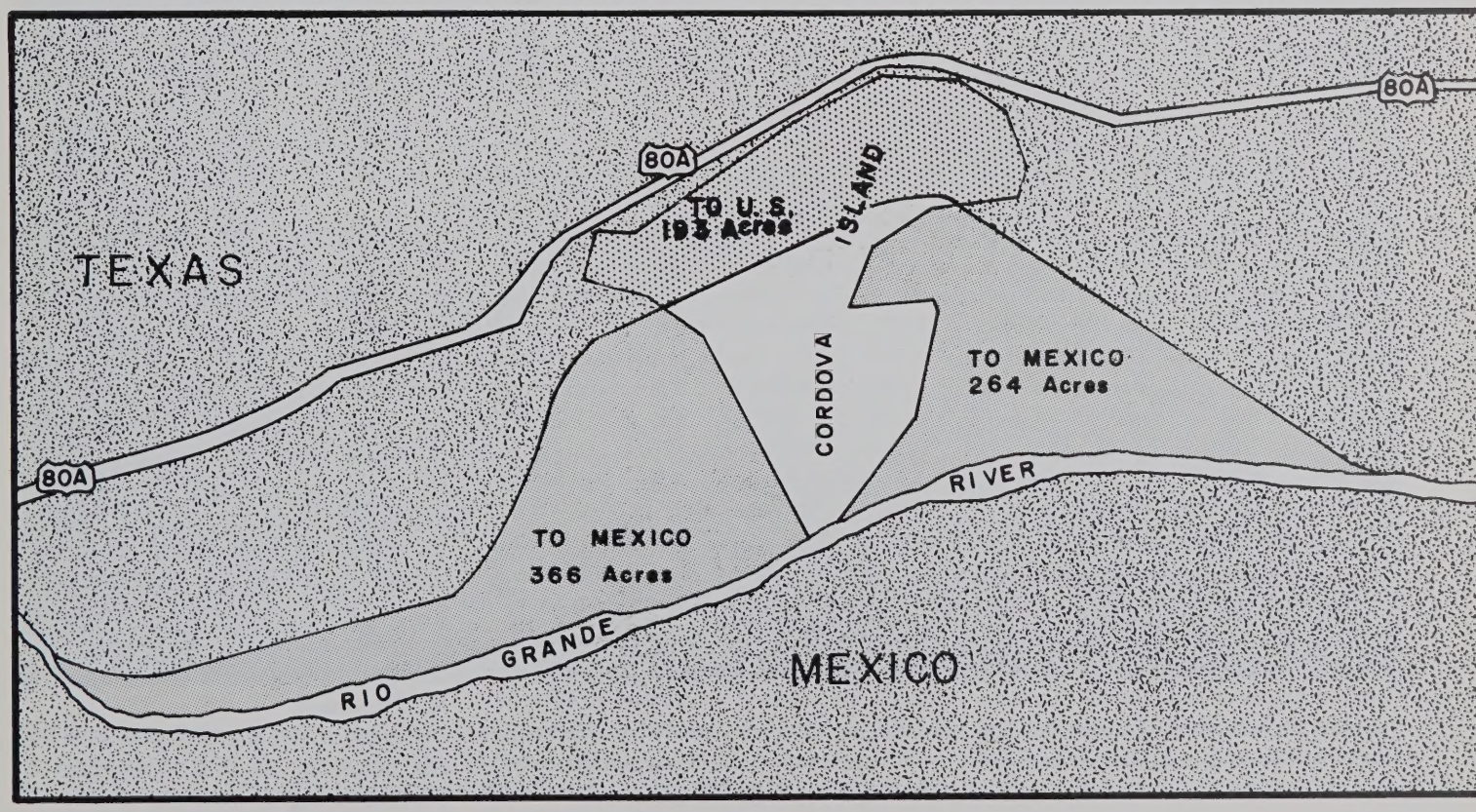
U.S. 80A skirts along the northern edge of the "island of land" . . . technically an enclave . . . so that drivers see Texas to the north and Old Mexico to the south of the highway.

But now, the top portion of Cordova Island may be given back to the United States, under terms of a settlement agreed upon by the late President Kennedy and President Adolfo Lopez Mateos. The settlement represents an effort to end the historical Chamizal Zone dispute. It has been ratified by the senates of both countries.

The legal tangle about the ownership of the Chamizal Tract has been going on for some 69 years, with some of the finest legal minds in the country seeking for a solution. Chamizal was the only one of dozens of river border claims which was not settled amicably by the two countries during the early years of the International Boundary Commission, which was founded in 1894.

The Chamizal Tract covers about 630 acres with a population of about 8,000. It lies directly south of El Paso's downtown business district and just west of Cordova Island. The new settlement proposes to move the Rio Grande boundary north, placing 437 acres of El Paso land in Mexico.

The new 4.3-mile-long boundary line cuts across the top of Cordova Island, giving 193 acres of it to the United States . . . . which means that now U.S. 80A is bordered by Texas soil on both sides. ■



M. G. CORNELIUS
Served 45 years . . . .

H. C. VEAZEY
New head of District 13.

Cornelius Retires, Veazey Named New District Engineer

M. G. Cornelius, District Engineer of District 13 at Yoakum, retired March 1.

H. C. Veazey was named as his successor. He served as acting District Engineer during March and became District Engineer April 1. Veazey has been Assistant District Engineer at Yoakum for the past 18 years.

Cornelius had been District Engineer since 1950. He first began his career with the Texas Highway Department in 1919 as a Rodman and Draftsman at Snyder. He was office engineer and Resident Engineer in the Amarillo district from 1932 to 1942. He was Senior Resident Engineer and District Construction Engineer at Houston from 1942 to 1950 when he was named District Engineer at Yoakum.

District 13 now has about 2,468 miles of highways, which includes 1,106 miles of U.S. and state-numbered highways and 1,362 miles of farm to market roads.

Two of the largest projects currently underway in District 13 are construction of I.H. 10 and improvement of U.S. 59.

One of the major projects completed in the district during Cornelius' tenure is the new Lavaca Bay Causeway.

The causeway is Texas' longest bridge and also it is the first prefabricated bridge ever built in Texas. It took about two years to build the causeway at a cost of about $5 million. It was dedicated and opened to traffic in July of 1961, only to be subjected to the wrath of Hurricane Carla two months later. Seven of the huge 150-ton concrete slabs were displaced from three to six feet during the storm. Some of the slabs were jacked back into place, but others had to be rebuilt. The causeway was reopened in February 1962, with repair costs amounting to $130,823.

New District Engineer Veazey began working for the Highway Department as an Instrumentman in 1929 in the Del Rio district. He transferred to Yoakum in 1936, becoming Assistant District Engineer in 1946.

District 13 is composed of nine counties, with its work forces ranging from 565 to 635 employes a year, depending on the season.

Cornelius and his wife plan to travel extensively in the U.S. They plan to continue living in Yoakum. ■

The Lavaca Bay Causeway—Texas' longest bridge—was one of the major projects completed in District 13 during M. G. Cornelius' tenure as District Engineer.

The new causeway replaced the 31-year-old two-lane structure of wood and concrete that had twice been partially destroyed by hurricane so that its rating was only 15,000 pounds maximum axle loading. Often trucks and motorists had to detour about 80 miles to go from Port Lavaca to Point Comfort, now only six miles apart over the new causeway.

A MOUNTAIN OF PENNIES

PUTTING a few pennies away at every opportunity for that proverbial "rainy day" is the traditional American way. However, many persons never acquire the "savings habit" for the total does not add up rapidly enough to be impressive, and they are not farsighted enough to project the figures over the long haul.

Equipment and Procurement Division Head John Nations will testify to the success of such a program . . . . and he has a small mountain of 72,800,000 pennies to back up his testimony.

These pennies represent the $728,000 saved by the Texas Highway Department during fiscal 1963 in equipment operation costs compared to fiscal 1960.

The task of transforming a $695,000 annual increase in equipment operation costs into a decrease of $33,000 is a major accomplishment by anybody's standards. However, this is exactly what the Department's 25 districts did during the past fiscal year with their Tire and Equipment Preventive Maintenance Program.

Back in 1960 it became evident that steps would have to be taken to economize when the year-end report showed a $695,000 increase in the cost of equipment operation. At that time Operation "Let's Save Pennies" was installed and excellent progress was shown in 1961, 1962 and 1963. Although each year showed good progress, 1963 topped each by good margins.

Tools employed by districts to accomplish the savings were many and varied. Recapping of all possible truck and grader tires was one means employed to reduce costs. Improvement of maintenance warehouse service facilities was another.

Regular field and shop inspection of equipment has enabled many districts to use their equipment 10 to 20 per cent longer before the trade-in, and this has resulted in less depreciation losses and fewer new equipment purchases.

To help in the preventive maintenance program about 58 per cent of maintenance warehouses have been provided with modern lubrication, lifts, heavy duty compressors, and tire service equipment not formerly available. In addition, 86 district warehouses have been built, remodeled, or rehabilitated to provide wash and lubrication stalls, loading docks and covered storage spaces for equipment.

However, the biggest single factor in this three-year achievement probably has been the fact that every man concerned with equipment care and operation has simply become more "equipment conscious."

In his 1963 fiscal year report John Nations points out, "More than 10,000 Texas Highway Department workmen are responsible for the significant savings during each of the last three years."

Texas Highway Department districts operated 13,520 units of major equipment in 1963 at the rate of $1,211,932.84 less than the comparable cost in 1960. This figure represents a reduction of $89.64 per unit within the three-year period.

The finest showing was made in 1963 when a reduction of $36.71 per unit accounted for $496,319.20, or about 41 per cent of the total. Not only have the districts cut total expenses from $1,146.49 per unit of major equipment in 1960 to a low of $1,056.85 in 1963, but for the first time in many years they have operated on less actual dollars spent than in the preceding year.

This lowering of Texas Highway Department equipment expense has resulted in reducing the equipment cost per mile of highway to $236.09, a drop of $11.24 per mile from the 1960 figure of $247.33. ■

Eyeing the 1970s

Denton Record-Chronicle, looking toward the 1970s — "It's good news indeed to know that the first step is finally about to be taken toward construction of what appears to be a $14 million expressway project in Denton County to link Denton and Fort Worth.

"The new expressway, as now planned, will come into Denton at Bonnie Brae and Eagle Drive, at NTSU's Fouts Field. It is at this point that the I.H. 35 designation splits into 35 East and 35 West. The eastern portion swings into Dallas on the existing Stemmons Freeway while 35 West goes through Fort Worth to join south of the two cities.

"Tremendous growth has resulted from the construction of Stemmons Freeway in Denton County, one of the first counties in the state to have a freeway completed. There's no reason to believe the new Fort Worth freeway will not have the same result when it is completed, hopefully, sometime before 1970."

The Roads to Austin

Austin Statesman, reflectively — "As one gazes from a relatively high eminence to the distant horizons in all directions, one is constantly amazed at the growth of Austin as evidenced by its many thousands of homes filling space that was only raw land only a relatively few years ago.

"Austin, like Rome, is built on many hills, and like Rome to which all roads led, all roads from every area of the state feed directly into highways leading into Austin. An estimated several millions of Texans at some time every year visit Austin on business, much of it connected with state government, its nearly 70 state association headquarters here, its conventions, as sightseers and for other reasons.

"The task of supplying an adequate cross-town system as extension of new and improved state and federal highways has not been easy, but in recent years it has accomplished a near miracle, thanks to a progressive and farseeing Texas Highway Department and its capable head, Dewitt Greer and its numerous efficient district engineers."

Highways and Prosperity

Fort Worth Press, facing the facts — "You could say in any year, that highways are a part of our major problem. This certainly is true in spades for 1964.

"Without adequate highways, traffic is congested. And without adequate highways industry suffers because people can't get to our markets and our products can't be economically distributed. Prosperity and progress are directly keyed to our highway system.

"We have made some substantial gains in the Fort Worth metropolitan area with our freeway system. But we have a long way to go, and necessity dictates that we move aggressively to fill the gaps.

"Highways should remain always at the top of our civic agenda. We build them and in a few years they become inadequate or even obsolete because demands are multiplied.

"We should never relax our vigilance or let the battle diminish. On this front, aggressiveness pays off. We must keep strong firepower concentrated there."

Traffic Sense

Dallas Morning News, editorially — "Texas Highway Department officials again demonstrate their ability to sense top traffic improvement needs by ordering start on the 15-mile northside link of Interstate Highway 635 during the new year.

"This $23,000,000 construction project, which was named the Lyndon B. Johnson Expressway last summer, will serve east-west traffic, including that generated by five Dallas County municipalities as well as the northern half of the city of Dallas. Garland, Richardson, Addison, Carrollton and Farmers Branch are the smaller cities to be served directly.

"Contracts to be let in 1964 will cover about one third of what finally will be an outer expressway loop to connect Stemmons Expressway on the north with Interstate Highway 35-E south of Oak Cliff."

This portion of S.H. 71 south of Austin in District 14 is being used to compare the AASHO test results with Texas conditions. Work ahead includes digging samples from the base, subgrade and pavement surface to be tested in the laboratory to determine the strength of the materials. The white post at the right indicates the end of the 2,500-foot comparison area.

AASHO Tests Promise Better Roads

AS YOU DRIVE over the highways of Texas did you ever wonder why some roads are much better than others? Why some roads remain in excellent condition year after year while others seem to be under constant repair?

The answers to these questions are many and varied. Natural soil of the area, sub-base, base and type of pavement each play an important part in the life of the highway. However, it is the combination of these four ingredients and how they are combined that spells the difference between a road that keeps its ride-ability and needs little repair and the road producing the rough ride and needing constant attention.

Engineers have known for many years that the type and quantity of vehicular traffic, the weather conditions and the maintenance program each play an important role in the life of a highway. They also have learned the type of construction from the natural soil through the pavement plays a key role in its serviceability.

However, money has never been available to conduct the extensive research needed to reduce highway building to simple mathematics. This is exactly what it would be, if the design engineer knew from research that he would get a certain result if he combined a certain base, sub-base and pavement over a certain natural soil. Thus, he could use a mathematical equation which would tell him exactly which materials to use to build a highway to do a certain job in a certain location at the lowest possible cost. With such an equation highways could be designed to last a certain number of years and provide good ride-ability during the period with a minimum of upkeep.

It all sounds very simple, and it is, except for one important point. The research to provide the design engineer with this basic information has never been completed.

In fact, until recent years no research has been undertaken to secure the information. Because of the lack of research money, most roads have been built with an "educated guess" based on what has happened under certain conditions in the past.

To take this guesswork out of highway construction, the highway departments of various states joined together, each contributing a portion of its research dollars. They conducted the needed tests jointly under the direction of the American Association of State Highway Officials. These tests, recently completed, were conducted over a two-year period at an Illinois site selected by AASHO members.

The Illinois tests have brought highway design engineers a giant step closer to their goal. As a result of the research a model basic design equation was developed.

Also, for the first time, engineers know the factual relation between the weight of a vehicle and its relative damage to the road.

However, since this equation was developed as a result of the Illinois tests, it is limited to materials, traffic and environmental conditions closely approximating those of the Illinois site. For this information to be of use in Texas, the

research results must be verified by the Texas Highway Department's engineers under Texas conditions using materials available for building Texas roads.

To verify the AASHO equation, more than 450 test sections have been selected by the Texas Highway Department throughout the state's highway system. Each of these test sections is 2,500 feet long and is marked by 4-inch by 4-inch posts, or by test section signs installed on the right of way line.

As many variations and combinations of pavement design and materials have been included in the test sections as possible. Research engineers have tabulated the amount of traffic carried by each of the sections prior to the start of the Texas tests. Records will be maintained on each section and a sample of the pavement, sub-base, base and natural soil will be taken at each test section site for laboratory analysis.

When the results are in, Texas Highway Department engineers will be able to use the information obtained from the Texas test locations to modify the AASHO model equation and make it applicable to Texas conditions.

Although it may be several years before the overall work can be completed, information will be made available to Texas Highway Department engineers just as soon as it has been verified under Texas conditions. Research engineers predict results of the Texas research program will be feeding into Texas Highway Department operations within the next year. ■

1963 A Record Year for Tourists

Out-of-state tourist travel in Texas topped all previous years in 1963. Approximately 11.7 million tourists spent some $532.2 million in the state last year.

The Texas Highway Department's annual tourist industry survey indicates the number of out-of-state visitors jumped about 21 per cent over 1962. Total volume of tourist income was up 12.8 per cent.

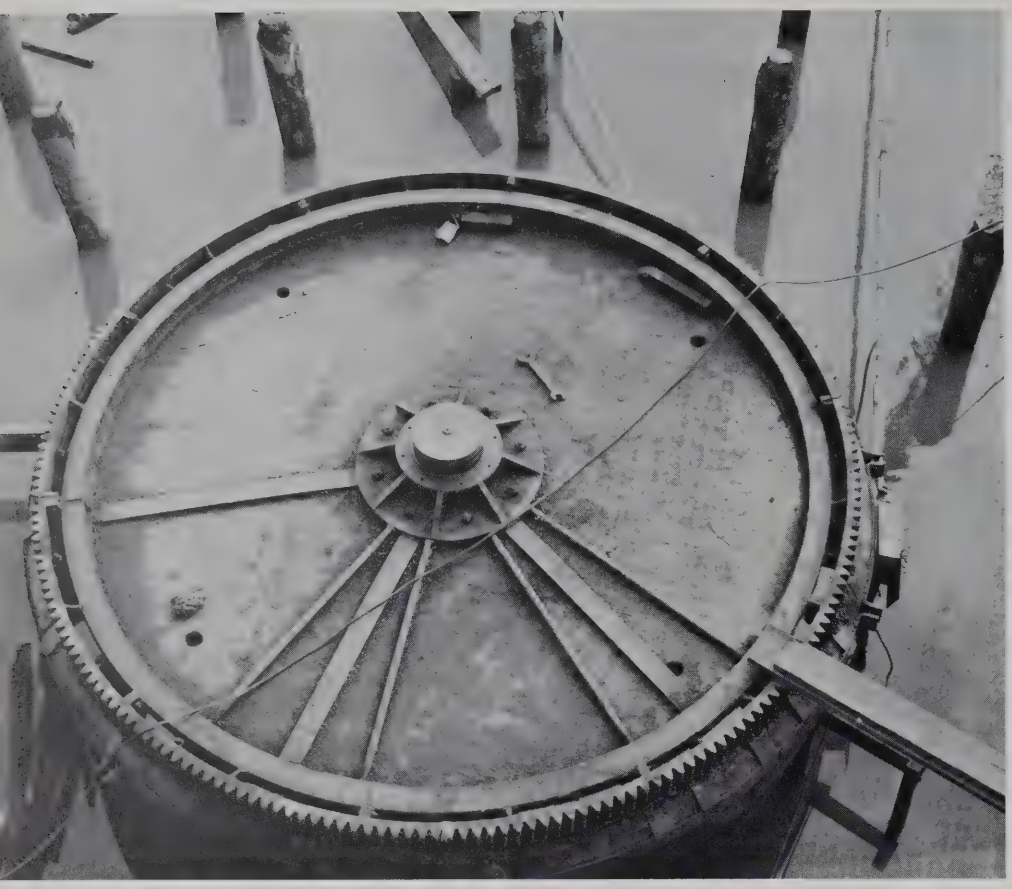
The healthy jump in tourist travel was the second in as many years, after a four-year decline. In 1962 approximately 9.6 million out-of-state tourists visited Texas and spent an estimated $471 million. This represented a 14 per cent gain in the number of visitors and a seven per cent gain in dollars spent in comparison to 1961.

Not since 1957 has the golden flow of tourist dollars crested above the one-half billion mark. In that year 10.3 million tourists spent $531 million in the Lone Star State.

The Travel and Information Division compiled and reported the survey. The Division prepares and distributes numerous publications, films, posters and other material to attract out-of-state visitors to Texas. It also operates seven tourist information bureaus at key points on highways leading into the state. More than 400,000 persons visited these hospitality centers last year.

In addition, nearly a quarter-million inquiries about Texas' recreational, historical and cultural centers were acknowledged by the Division last year. It also is responsible for the Official Highway Travel Map, trip routing services, and monthly and emergency Road Condition Reports.

Ultimately each tourist dollar benefits the economy of the entire state. The Highway Department estimates total volume of tourist travel and its impact upon the Texas economy by questioning out-of-state visitors at the tourist information bureaus and by other sampling methods. ■



This turntable is the target Highway Department crews had to hit with a 300-ton bridge. To the right is a scene of the High Island Bridge in District 12 under repair work after it was knocked from its turntable by a tug. It took about five weeks to complete repair work.

FATE AND THE

F. W. Brown, Senior Resident Engineer
Houston, District 12

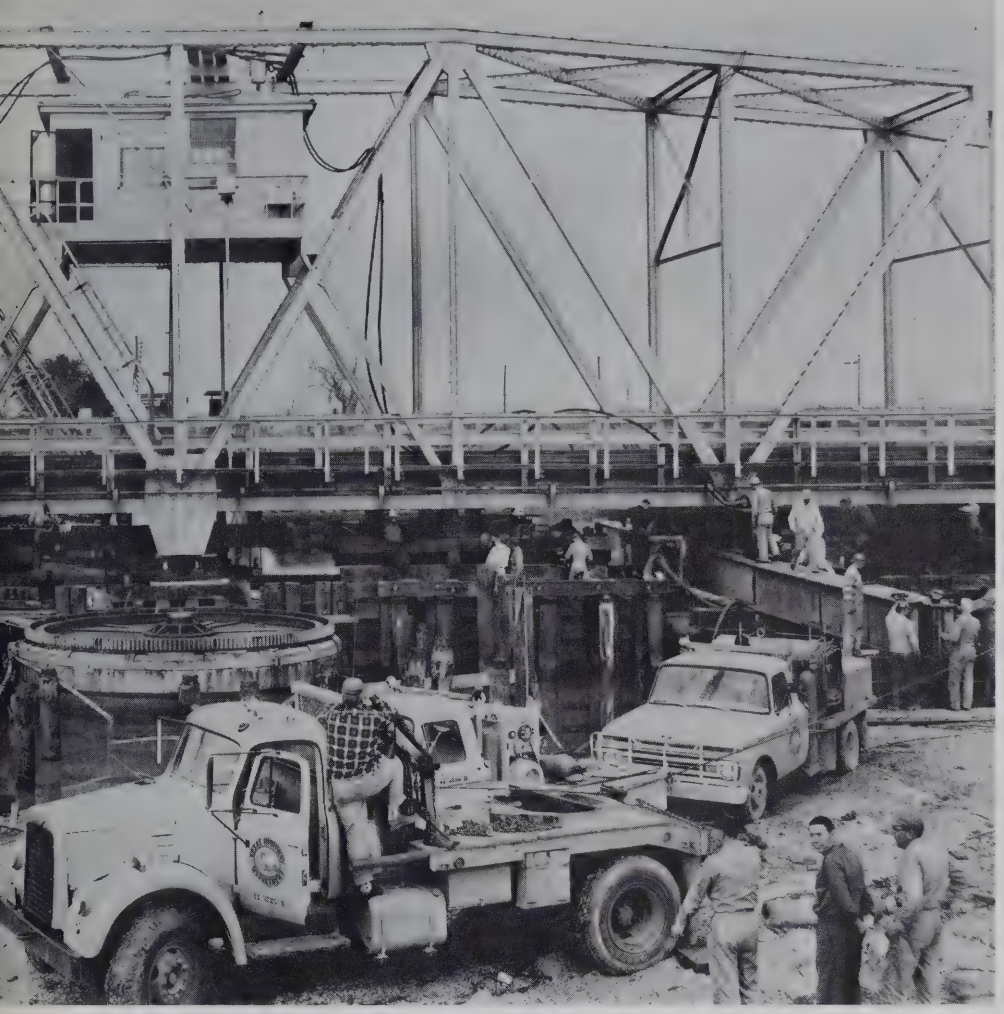
SHOULD ANYONE be banished in District 12, the most likely place he would be sent would be to the High Island Bridge.

This is because of its almost inaccessible location from Houston. Only mosquitoes and bridge operators can stand the isolation. Actually, the mosquitoes stay only a short time before leaving for Houston.

The bridge is on State Highway 124 crossing the Intracoastal Canal about a mile from the small community of High Island, which is in sight of the Gulf of Mexico.

The bridge and the community often become centers of drama during hurricanes. People from along the coast from Sabine Pass to Gilchrist flock to the relatively high ground of High Island at the approach of a hurricane.

One of the bridge operators sweated out Hurricane Carla in 1961 for several days while isolated in the control house



Skilled Laborer Jack Simpton, a 30-year veteran of the Highway Department, can still smile . . . . even after working through the Christmas holidays to get the High Island Bridge open to traffic again.

HIGH ISLAND BRIDGE

of the bridge. All means of communication, including the telephone and radio, were inoperative. High water prevented him from leaving and rescuers from reaching him.

But hurricanes are not the only source of high drama so far as the bridge is concerned.

Every few years it is apparently the fate of the Marine Section, which is responsible for the maintenance of the bridge, to spend a month or so of maximum effort to repair the bridge after a bout with a string of barges.

It is an uneven match; the bridge always loses.

The last such encounter occurred early in the morning on December 20, 1963, when the tug *Gene C. Hutchinson*, pulling five empty petroleum barges, did an estimated $150,000 worth of damage to the bridge. Fortunately, no injuries occurred to the crew of the tug or to Melvin C. Harrington, operator of the bridge.

The bridge was knocked from its turntable and was left partially blocking the Intracoastal Canal. By the afternoon of the next day, Brown & Root had contracted to assist in the repairs.

Pitting their efforts together to restore this important highway facility, work was begun by Brown & Root's crews, the District Marine Section, the district shop welding force, and two special job crews of J. Sloan Brown, Maintenance

A crane barge, shown at the left, "picked up" the bridge and deposited it on another barge where the repair work was done. Ed Haraldson Jr., Senior Designing Engineer, took this picture.

Construction Superintendent. J. W. Gray, Maintenance Construction Foreman II, supervised the District Marine Section; and Robert Davis, Shop Foreman II, directed the welding force. Thomas D. Cain and W. W. Timme, both Maintenance Construction Foremen II, supervised the two special job crews.

The combined forces, working as long as 18 hours a day through the Christmas holidays, had the bridge ready to be "picked up" by the *L. T. Bolin,* Brown & Root's crane barge, on December 27. The lifting operations started about 1:30 p.m., and by 7:30 p.m. the bridge—weighing more than 300 tons—had been carried several hundred yards and deposited onto a barge where it was to be repaired.

As soon as the bridge was carried away from the bridge site, the *P. T. Lipscomb,* the district's self-propelled work barge, began driving piles for a temporary swing-bridge landing. Thomas Nixon, Maintenance Construction Foreman II, supervised the work. The bridge was open to vehicular traffic on December 30.

The channel traffic apparently believes that once you get an opponent down, the motto should be "stomp 'em," for on two different occasions by January 16, the bridge fender system had been hit causing additional damage.

With the exception of New Year's Day, the Department crews worked continually until January 22, repairing the main girders and the carriage. The drive shaft, pinion gear, and the entire roller system were damaged and required rebuilding or replacing.

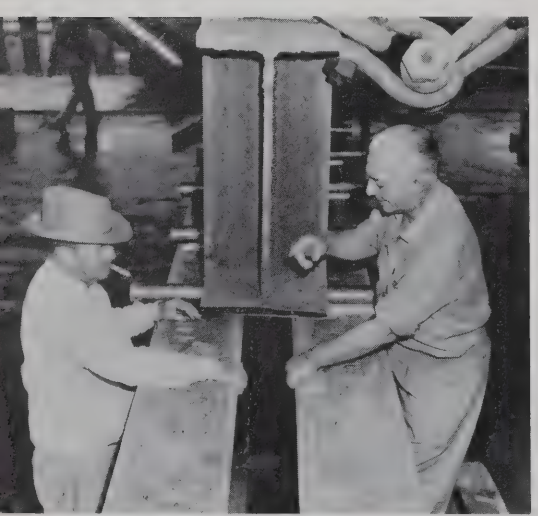
Early in the morning on January 22, the barge carrying the bridge was towed back to the bridge site. By 6:30 p.m., the bridge was transferred from the barge to its location over the turntable. This work, completed in *12 hours,* was done entirely by state forces. A construction firm had estimated that this job would require *96 hours.*

Briefly, the transfer was conducted this way:

Two large steel beams were placed between the barge and the bridge. The beams were supported on each end by piles. Water was pumped into the barge until it had settled sufficiently to permit the bridge to rest on rollers that had been placed on the beams. Cables were fastened to the bridge and winches were used to pull the bridge into position over the turntable.

The crews lowered the bridge to its final position on the turntable on Friday afternoon, January 24, and they enjoyed their first weekend since the bridge was hit on December 20.

On January 28, at 4 p.m., the High Island Bridge was restored to full operation, ready to serve both highway and channel traffic . . . . . until such time as fate intervenes again. ■



R. A. Scott, District Maintenance Supervisor, right, indicates the location to install snatch block to J. Sloan Brown, Maintenance Construction Superintendent.

AWARDS

35 Years

District 1
Arthur J. Davis, Skilled Laborer
Gladney C. Vick, Skilled Laborer

District 3
Addison C. Rich, Skilled Laborer

District 8
Clayton C. Reed, Designing Engineer

District 11
Edmond Lewis Sr., Skilled Laborer

District 14
William A. Emmrich, Skilled Laborer
Elgin G. Bauer, Skilled Laborer

30 Years

D-9
Dora P. Olson, Clerical Supervisor II

District 1
James R. White, Maintenance Construction Foreman II

District 9
John W. Herring, Skilled Laborer
Aaron J. Hardwick, Skilled Laborer
Hershal C. Sharp, Maintenance Construction Foreman III

District 15
Sam Durham, Senior Resident Engineer
Lawrence Scheel, Skilled Laborer

District 17
Harley E. Bain, Engineering Aide IV

District 23
Weldon B. Thornton, Skilled Laborer

District 25
Edward Weckar, Skilled Laborer

25 Years

District 1
Garrett M. Alsup, Skilled Laborer
Felix A. Frazier Jr., Draftsman III
Emmett Nichols, Skilled Laborer
William J. Thomas, Engineering Aide IV

District 4
Noble F. Yates, Skilled Laborer

District 9
Richard D. Forrest, Stock Clerk III

District 11
John S. Kendrick, Skilled Laborer

District 14
Frank P. Faris, Senior Resident Engineer
Cecil B. Harrison, Shop Foreman II

District 15
Charles E. Ebensberger, Field Survey Worker III

District 20
Harlan E. Furry, Supervising Designing Engineer

District 23
Sidney G. McCullough, Engineering Aide IV

25-Year Awards for January, February and March

D-15
Ernest K. Gay, Machine Accounting Supervisor I

District 1
Van Calvery, Engineering Aide III

District 3
Floyd M. Whetsell, Skilled Laborer
Booger R. Hunter, Senior Laboratory Engineer

District 5
Herbert E. DeShazo, Senior Resident Engineer
John Neugent, Skilled Laborer

District 7
Donald N. Carlton, Senior Designing Engineer

District 8
Frederick N. Shave, Senior Resident Engineer
Clint Kent, Maintenance Construction Foreman III

District 10
Jessie P. Loper, Inspector III

District 12
Edward F. Marchman, Maintenance Construction Foreman III
Rufus I. Hoke, Maintenance Construction Foreman III

District 23
Ferrell D. Waren, Engineering Aide IV
William M. Pittman Jr., Draftsman III

District 24
Jose Villanueva, Skilled Laborer

Photo courtesy Baltimore News American

only the week before.....

JUST EIGHT DAYS before his tragic assassination, President John F. Kennedy dedicated a new 53-mile toll road—part of Interstate Route 95—between the Delaware River Memorial Bridge and Baltimore.

Smiling and cheerful despite the cold, windy weather, the late President cut the ribbon to open the new facility, reports the *Highway User*. The new highway now makes it possible to drive from New York to Washington without encountering a single stop light or cross road at grade.

In his brief address to the crowd of more than 10,000 persons, President Kennedy said that the new Interstate route was a symbol of Federal-state partnership. He said the road "symbolizes the effort we have made to achieve the most modern Interstate System in the world, a system which, when completed, will save more than 8,000 lives a year and $9 billion in costs."

Eight days later, President Kennedy lost his own life, taken by a man with a high-powered rifle who fired from ambush as the President passed by in a motorcade in Dallas.

And as the nation grieved, hundreds of people used the new road dedicated by the late Chief Executive on their way to Washington to pay their final respects. ■

A LIVING MEMORIAL

The horrible deed of November 22, 1963, brought the nation to a virtual standstill. As the shock of the assassination of President John F. Kennedy began to wear off, the good people of the United States looked for ways to honor the man who had become a symbol of youthful vigor and vitality and the search for peace, not only here but throughout the world. And so highways, bridges, schools and so on have been named to honor him.

Since that terrible November day, great volumes of tribute have been written and spoken. And men everywhere have pointed to some area of the late president's program to suggest that here is an area in which he could be honored.

For the highway and transportation industry, we'd like to point again to the national transportation policy enunciated by Mr. Kennedy in 1962. What he said then still pertains:

"A chaotic patchwork of inconsistent and often obsolete legislation and regulation has evolved from a history of specific actions addressed to specific industries at specific times. This patchwork does not fully reflect either the dramatic changes in technology of the past half-century or the parallel changes in the structure of competition . . . . The difficulty and complexity of these basic troubles will not correct themselves with the mere passage of time. On the contrary, we cannot afford to delay further. Facing up to the realities of the situation, we must begin to make the painful decisions necessary to providing the transportation system required by the United States of today and tomorrow."

A good place to start in the establishment of a living memorial to the memory of President Kennedy would be to face up to those realities—today.

—Better Roads Magazine

other voices

Marshshoes

What do you do when you have to get to a bridge boring site, and the marshy ground is too soft to walk on but yet there isn't enough water to float a boat?

South Carolina State Highway Department engineers found a solution. Recalling how duck hunters often use small pontoons to get around in marshes, they designed similar individual pontoons to use to reach the bridge boring site.

The result was two lightweight plywood pontoons, one for each foot. Ropes were attached so the wearer could steady himself when moving over the soft ground. The movement somewhat resembles the mechanics of water skiing. The plywood mud float shoes slide along the muck, providing enough buoyancy to hold a person up. If they settle, the ropes are used to free them.

New Roadside Service

Roadside mailboxes, the first in the U.S. to offer collection services to highway motorists, are now installed on U.S. 70, U.S. 1 and U.S. 70-401 on the outskirts of Raleigh, North Carolina.

Reflectorized blue and white information signs designating the location of the new postal facilities were posted by the traffic department of the North Carolina State Highway Commission, in cooperation with the U.S. Post Office Department. Collections will be made on an experimental basis until the new service has been evaluated.

the new, the novel, the unique in highways

Chesapeake Bay Bridge

Construction on the ocean-spanning Chesapeake Bay Bridge and Tunnel project is nearly completed, with official opening to be very soon this spring.

Informally labeled one of the "Five Future Wonders of the World" by the American Society of Civil Engineers, the massive 17.6-mile bridge-tunnel will replace existing ferry service across the lower portion of Chesapeake Bay. It will eliminate the last water barrier on a highway running almost straight down the east coast of the United States. Total estimated cost of the structure is $139,200,000. An estimated 5,027 vehicles daily will use the facility during its first year of operation.

The project is a combination of bridge and tunnel, as it was considered unfeasible to build bridges high enough to clear the two major shipping channels in the bay. The tunnels go under the channels, with the remainder of the roadway running on a trestle.

The tunnels were built by sinking prefabricated sections of concrete reinforced casing in a prepared trench. The Thimble Shoal Tunnel is 5,738 feet long and permits a navigational channel 50 feet deep and 1,900 feet wide. The Baltimore Channel Tunnel is 5,450 feet long, providing for a channel 50 feet deep and 1,700 feet wide. The trestle roadway incorporates two bridges over lesser channels.

Four man-made islands provide the base for the depressed approach ramps to the tunnels and operations headquarters.

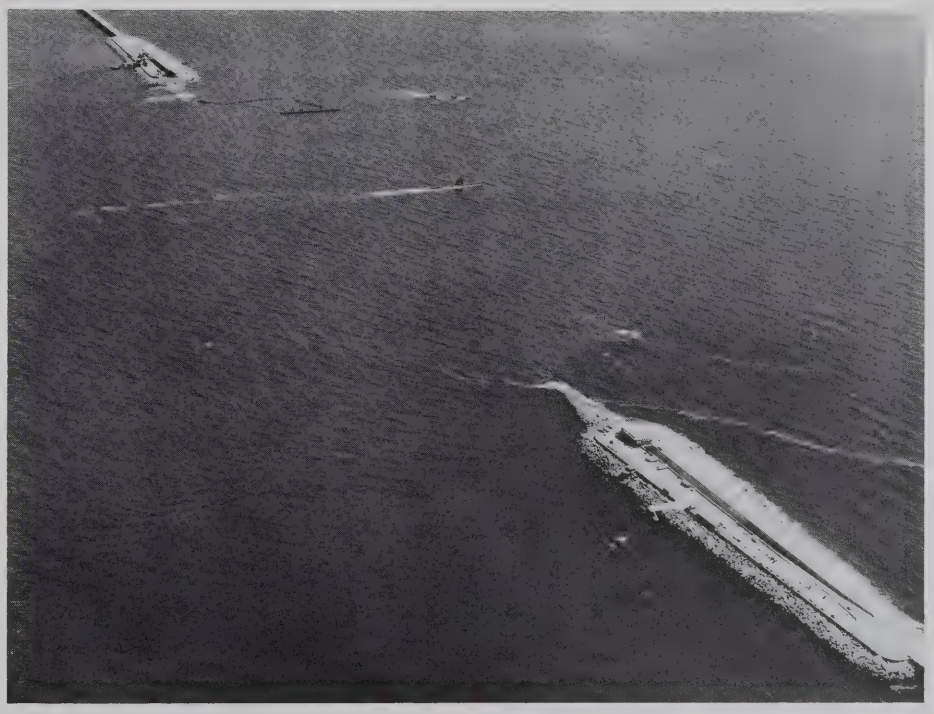
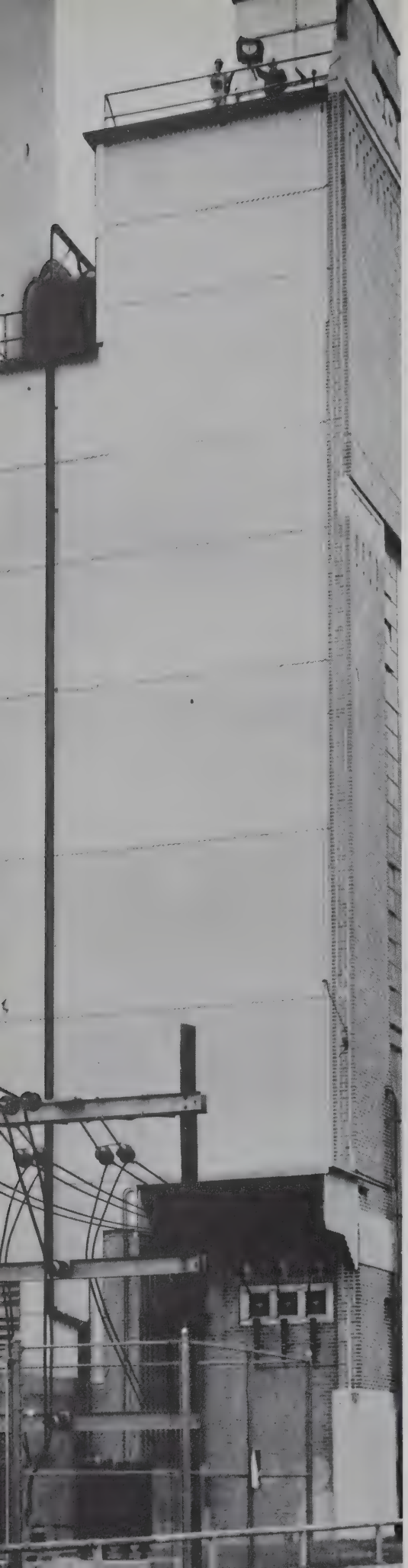


Photo courtesy World Highways

This view shows the two man-made islands at each end of the Thimble Shoal Channel tunnel. The Chesapeake Bay Bridge and Tunnel project is comprised of two tunnels, a trestle roadway, two bridges, an island causeway, and new four-lane highway approaches.



Advanced Surveying Methods

This article reports on another application of the use of photogrammetric methods, supported by the use of electronic distance measuring equipment, in making surveys for highway locations in highly developed urban areas. The exact saving in time and money is not readily determined, but it is so significant that it makes a study of the subject unnecessary.

— Highway Design Division

Bill W. Jones, Engineering Aide III
Beaumont, District 20

CONSTRUCTION of today's highway system has brought many challenging problems to engineers engaged in surveying and mapping, foremost of which are the increasing requirements for mapping and geodetic data necessary in planning and constructing our complex highway system.

Surveying by conventional methods along existing thoroughfares has been complicated by heavy traffic. The traffic hazard is accentuated when the route to be surveyed begins in a highly industrialized area and passes through the heart of the central business district.

These problems loomed up when it became necessary to make a survey for location, design, and construction of a central distributor highway system in Beaumont.

High atop this power station building on top of a seven-foot retainer wall lies a triangulation station (arrow) set up by the United States Coast and Geodetic Survey. Highway Department surveyors can be seen standing just to left of wall.

The use of photogrammetry for final location, design, and right of way procurement offered us maximum safety for personnel and equipment at minimum expense.

We selected a scale of $1'' = 20'$ for the planimetric maps because horizontal accuracy of less than 0.5 foot is necessary for buying industrial and business property for right of way. Topographic maps at this same scale would give existing features with elevation indicators accurate to 0.2 foot or less.

We planned to tie into the Texas Plane Coordinate System. To obtain the overall accuracy necessary for the project, it was necessary to have a basic traverse of at least second order accuracy (1/10,000).

We determined the path of flight

Electrotape operators stand in whizzing traffic to measure the distance to the Gulf States Utility Company's Neches River power plant triangulation station about two and one-half miles away.

and established the base line by placing monuments at all control points. The Electrotape, an electronic distance measuring device, was used to measure the distance along the traverse. Intermediate or panel points were fixed by chaining, then checked against the distances measured by the Electrotape to eliminate errors. Intermediate points were set at 200-foot intervals to insure that at least two points showed on the overlapping area of successive aerial photographs. Additional traverses that originated from and terminated at points on the basic traverse were run and intermediate points set for adjacent flights.

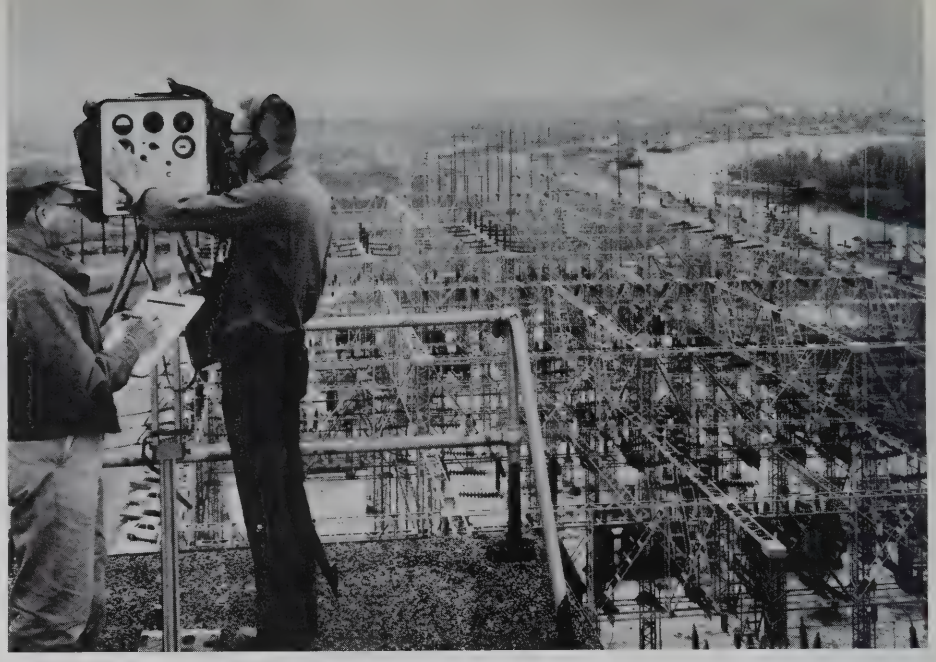
To relate the traverse to the Texas State Plane Coordinate System, we tied to triangulation stations established by the United States Coast and Geodetic Survey. Upon investigation, we found only two triangulation stations in the area that could be occupied; the Beaumont triangulation station located approximately two miles west of the base line, and the Gulf States Utility Company's Neches River power plant triangulation station about two and one-half miles east of the base line.

From these triangulation stations, several reference stations could be observed. The power station's location is on the top southwest corner of a six-inch retainer wall on the roof of the power plant. The retainer wall is about seven feet above the roof of the power plant, making it impossible to occupy this point without an elaborate scaffold.

By offsetting the point we were able to "wiggle in" on the azimuth between the power triangulation station and the Port of Beaumont water tank reference station. After establishing the temporary station, the distance from the power station to the temporary station was carefully measured and recorded. Next, we took a foresight on the Port of Beaumont station and measured angles to two base line points.

Because of the distance involved, it was necessary to use a battery-powered light unit on the base line points. We then occupied both points on the base line and measured the angles between the base line and the temporary station, again using the light unit on the point to be observed. One unit of the Electrotape was placed on the temporary station and the other was placed on one point of the base line that was to be related to the power triangulation station.

After measuring this distance, the Electrotape unit was moved to the second point to be tied. The base line was tied directly into the Beaumont triangulation station, closing the basic traverse.



Recorder Millard Lavine, left, District 20, records distance data as Electrotape Operator L. T. Harris Jr. reads distance to a base line more than two miles away.

If the power triangulation station had been tied to the base line by conventional surveying methods, it would have been necessary to chain through the power distribution station, across one and one-half miles of marsh area, and through a portion of a large chemical plant to reach each of the points on the base line.

The cost of establishing a basic traverse of this length, using conventional surveying methods, relating it to the Texas State Plane Coordinate System and obtaining the horizontal locations of existing features with the elevations, would have been many times greater than the cost of photogrammetry.

All angular measurements on the base line and the ties to the triangulation stations were made with a Kern DKM 2 Theodolite and all distances were measured with the Electrotape. All equipment and the operators of the Electrotape were from the Photogrammetry Section of the Highway Design Division in Austin.

We are making two additional flights in Jefferson County and will tie them into the Texas State Plane Coordinate System. Upon completion, the three routes will be located permanently with coordinates assigned. Coordinates along these routes may then be used as control points for further route location, design, and right of way procurement. Thus the Coordinate System gradually will be extended, and photogrammetry and electronic equipment gradually will supplement our present system of surveying. ■

L. T. Harris Jr., Photogrammetry Section, Highway Design Division, locates "panel points" along U.S. 69, 96, 287 in District 20 in an advanced surveying method in that district. Panel points painted on the ground help engineers determine the scale on aerial photographs.

The New Look in Highway Signs

Some major changes are being made in the highway signs along Texas travelways. But the average motorist probably won't even notice them.

The changes, announced by the Texas Highway Department in February, are keyed to higher driving speeds. A number of signs will be increased in size in coming months, and they will be mounted higher in rural areas in some cases for better high speed visibility.

A few old signs will be replaced by new ones with minor modifications—the shield identifying U. S. highways in some sign assemblies will appear in silhouette instead of outline, for instance, as new signs replace old ones on a maintenance replacement basis. And some new signs will be added in months to come.

As signs are modified for higher speeds, so will be the length of yellow lines identifying no-passing zones. These will henceforth be computed and laid out on the assumption most drivers' eyes are four feet above the pavement, instead of four feet six inches, as was formerly the case. Reason: Lower height of modern cars.

The Department's program to revamp many traffic signs will not be a revolutionary one. Revisions are necessary mainly because of higher average speeds on today's modern highways. Some changes also have been ordered to maintain conformity with signing practices recommended by the American Association of State Highway Officials (AASHO).

Most forthcoming changes, like an increased distance between a sign and the hazard it warns of, will probably not even be noticed consciously by the driving public.

Signing changes authorized by the Texas Highway Commission make up a new chapter in the history of trail blazing in Texas. The fact is, before they had roads, Texans had road signs.

The earliest Texas road signs were probably blazes marked on trees in East Texas to guide Shawnee, Cherokee, Caddo and other Indians long before the Texas Highway Department was established in 1917.

Traffic of course was slower then. Today, the Department realizes, road signs must be clear, unmistakable, concise, and quickly visible by 70-mile-an-hour traffic.

Perhaps more importantly, they must be consistent. The symbol which means "Stop" in West Texas must not mean "Railroad Crossing" in the Valley.

Since its inception the Highway Department has taken an active part in developing and urging a system of standard travelway signs instantly recognizable by all drivers. Virtually all signs on Texas highways conform with national standards. ■

RETIREMENTS

D-12
Marguerite A. Williams, Clerk III

District 1
Andrew D. Bishop, Watchman III

District 3
John F. Hickman, Maintenance and Construction

District 4
Clyde B. Cummings, Skilled Laborer

District 5
James C. Price, Skilled Laborer

District 6
Luis Ortega, Skilled Laborer
Miguel M. Tercero, Utilityman

District 7
Jim Butler, Maintenance Construction Foreman III

District 9
Thurman S. Alexander, Skilled Laborer
Richard Pearce, Inspector III

District 10
Jimmie L. Riddle, Skilled Laborer

District 12
Thomas L. Norman, Semi-Skilled Laborer

District 13
Odell W. Albers, Skilled Laborer
Otto Hanys, Skilled Laborer
George I. Hill, Semi-Skilled Laborer

District 14
Theodore H. Lohl, Semi-Skilled Laborer
Fritz M. Merkel, Skilled Laborer

District 15
Thomas S. Harrell, Skilled Laborer
Macario A. Trinidad, Semi-Skilled Laborer

District 19
James A. Pool, Semi-Skilled Laborer

District 20
Joseph F. Brazzel, Semi-Skilled Laborer
Charles A. Davison, Skilled Laborer
Jodie B. Wheeler, Skilled Laborer

District 21
Otto S. Coffey, Engineering Aide II

District 25
William D. Jones, Skilled Laborer

"Can-Do" Conduit

John C. Herrera Jr., Engineering Assistant II
Houston, District 12

FOR THE PAST YEAR, District 12 has been employing with great success a new technique in "pushing" electrical conduit under roadways.

Ellis L. Shuptrine, former Skilled Laborer in District 12's Electrical Shop, now employed in District 20, originated the new technique. He suggested that if an air-tamp were substituted for the hydraulic jack, which was being used at that time, a substantial savings in time required to complete a "push" would be realized. C. G. Jarvis, Engineering Aide IV, District 12's Electrical Shop supervisor, recognized the merit of this suggestion and authorized the procedural change.

By using this method, the Electrical Shop can complete as many as five "pushes" a day, with some as long as 80 feet. This compares to the average of just one completed "push" a day under the old method.

To use the new method, a trench first must be dug on one side of the roadway. It has to be long enough and wide enough to accommodate a section of conduit, air-tamp and personnel to operate the air-tamp and steady the conduit. The trench should be about six inches lower than the desired elevation of the conduit. A 2-inch by 8-inch plank is placed in the bottom of the trench to prevent the foot of the air-tamp from digging into the ground.

The conduit is prepared for driving by placing a nipple at each end of the section. One serves as the point of the "push," and the other protects the threads of the conduit from the foot of the tamp.

The latter is removed after the section is driven and attached to the following section. As the conduit is driven, the foot of the air-tamp is kept snug against the conduit by means of a coffin hoist, which is attached to the base of the air-tamp and in turn is attached to any piece of heavy equipment available on the job site.

The result of using this new method has been a savings of hundreds of dollars to the State, and it also represents a more efficient utilization of manpower. ■

The top picture shows a "push" completed on initial section of conduit. Note position of equipment.

Air-tamp is in position for driving conduit in center picture. Note nipple on end of conduit.

Coffin hoist is used to advance air-tamp in bottom picture. Chain is secured to air compressor axle.

Planting salt cedar and Bermudagrass along the right of way of State Highway 361 between Port Aransas and Aransas Pass in District 16 has solved the dangerous problem of sand drifting over the pavement.

EROSION CONTROL

Russell A. Reeb, Engineering Assistant I
Corpus Christi, District 16

BLOWING SANDS that disfigure highway contours and form drifts at bridge approaches are a real threat where Texas highways hug the Gulf Coast.

The possibility of drifts causing an accident on State Highway 361 between Port Aransas and Aransas Pass became a growing problem after the highway was completed in 1960.

Before 1960, the only vehicle route between the two towns was the old one-way timber bridge with turnouts for passing. This led to the ferry landing for transportation across the Harbor Island Ship Channel to Port Aransas on Mustang Island.

Constructed on hydraulic fill, the new highway roughly parallels the old road and timber causeways. Four structures were necessary on this highway to cross Seawall Channel, the Intracoastal Waterway with its 50-foot navigation clearance, Redfish Bay and the Morris and Cummins Cut. When Hurricane Carla washed out 1,500 feet of road in September 1961, we realized it was necessary to have a bridge to remedy areas flooded by the high tidal waters, thus the creation of Relief Bridge.

With no vegetation to anchor the sand, dangerous drifts began to form on the new highway and in the super-elevated areas of the curves. We knew that an overlay of some tight material (mulching) or grasses or plants native to the salty soil was necessary to prevent wind erosion and soil glare.

District Maintenance Engineer Herman Schneeman and Maintenance Construction Foreman Karl Kutzer decided mulching would be virtually impossible because right of way was as much as 1,500 feet in places. Planting the area seemed to be the solution.

We thinned salt cedars at another section of highway and took the trimmings to the eroded area. The branches were approximately one-half inch to three-fourths inch in diameter. The crew pushed holes 12 inches deep with 3/4-inch reinforcing rods in a line parallel to the highway on five to seven-foot spacings for the salt cedar limbs. Beginning at the worst erosion spot, we planted the trimmings the length of the highway on both sides. We also sowed Bermudagrass where this salt cedar protection is available.

Plantings were made late in 1962 and in February and March 1963. Excellent rootings from both plantings resulted but the growth, during the summer, of the spring planting seemed better than the growth of the late 1962 planting. We will continue to plant salt cedar in all barren areas adjacent to the pavement and to sow Bermudagrass.

Not only is the vegetation holding down the drifting sand, but now there is a very pleasing contrast between the white glaring sand and the green plants along this six-mile stretch that hugs the Texas coast. ■

To and From Our Readers

Residency Changes Made

Thomas A. Fisher Jr., Senior Resident Engineer of the Fort Bend County Residency at Rosenberg in District 12, has resigned to become associated with an allied industry. He had been with the Department for 19 years.

William A. Clark has been promoted from Senior Resident Engineer to Supervising Resident Engineer of the Fort Bend County Residency.

Charles F. Hawn Honored

Former Texas Highway Commission member Charles F. Hawn of Athens was honored at a highway dedication ceremony near Dallas on January 27. In fact, the new stretch of highway was named by local officials as the Hawn Freeway.

The limits of the newly opened segment are from an intersection with I.H. 45 at Macon Street east to 4.10 miles northwest of Lake June Road, a distance of 2.9 miles.

Hawn retired from the Highway Commission last year after serving six years. January 27 was proclaimed Hawn Day in Dallas, and some 1,000 persons attended the activities honoring Hawn for his work with the Texas Highway Department and for his civic leadership.

Engineers of the Year

Two Texas Highway Department engineers have been named Engineers of the Year.

They are Ed Bluestein, District Engineer of District 14 at Austin, and Robert O. Lytton, District Engineer of District 15 at San Antonio.

Bluestein was cited by the Travis Chapter of the Texas Society of Professional Engineers. Lytton was chosen by the Bexar County Chapter. The announcements highlighted National Engineers' Week activities February 16-22 in Austin and San Antonio.

Lytton has been with the Highway Department since 1933, and has been District Engineer since 1959. Bluestein joined the Department in 1924, becoming District Engineer in 1952.

Marvel Heads TITE

Dale Marvel, District Maintenance Engineer at Houston in District 12, is the new president of the Texas Section of the Institute of Traffic Engineers.

The tenth annual meeting of the Texas Section was in January at Waco. Another meeting is scheduled for June 20 in Austin, and the January 1965 meeting is slated to be held in El Paso.

The Garden Clubs' Choice

J. P. Norwood, Maintenance Construction Foreman at Woodville in District 20, received the 1963 National Award of Commendation for outstanding work in highway landscaping in the Woodville area.

The award was presented by the Southwest Region of Men's Garden Clubs of America at a meeting in October of the Greater Beaumont's Men's Garden Club. Roy S. Rodman, landscape architect of Maintenance Operations Division in Austin, was the principal speaker at the event.

"I THINK WHAT WE ALL NEED IS A VACATION."

TEXAS HIGHWAY COMMISSION

HERBERT C. PETRY JR.	Chairman
HAL WOODWARD	Member
J. H. KULTGEN	Member
D. C. GREER	State Highway Engineer

Texas Highways

TEXAS HIGHWAYS, official journal of the Texas Highway Department, is published in the interest of highway development in Texas and for departmental education in the improvement of construction, maintenance, and operation.

TEXAS HIGHWAYS is available to the general public on a subscription basis at $3.50 annually, or it can be purchased for 35 cents a copy. Subscriptions, inquiries, material, or manuscripts should be directed to the Editorial Office, Travel and Information Division, Texas Highway Department, Austin 14, Texas.

A Bit of Philosophy

A true philosopher has opined that most of life's problems are really like those cloverleaf exchanges on our highways: it may not seem like it at first, but there's always a way out.

Correcting History

Polk County in District 11 has corrected an historical error made almost 28 years ago.

The Texas Highway Department gave permission to the county's Historical Survey Committee to transfer from San Jacinto County to Polk County a 1,500-pound granite monument marking the site of Swartwout, a steamboat port on the Trinity River in the days before the Civil War.

The monument stood in San Jacinto County, on the river's west bank, until recently when it fell from the eroding bank. A Livingston man hired two automobile wreckers to haul it out of the mud and bring it to Livingston.

There is no dispute between the two counties that Swartwout was located rightfully in Polk County. "It apparently was an error made in 1936 when the monument was erected," said Mrs. John J. Hollenburger of Livingston, chairman of the Polk County historical group. She is the great-granddaughter of Arthur Garner, who founded Swartwout in 1838 with James Morgan and Thomas Bradley.

No Comparison

Khrushchev's "We'll bury you" boast draws yawns at the Texas Highway Department.

Fifty per cent more new highway miles were opened to traffic in Texas in the past fiscal year than will be built in all of the Soviet Union during 1963.

A total of 977 miles of new highways were added to the Texas transportation network during fiscal 1963. This compares to just 620 new highway miles for Russia this year, according to *Highway Research Abstracts.*

Texas also reconstructed an additional 1,734 miles of new construction over existing routes. No such figures are available from the USSR.

The designated all-weather highway system in Texas totals about 65,000 miles. In 1959 the Russian hard-surfaced highway system totaled 36,000 miles. Both networks serve a similar number of vehicles—about 5,500,000.

Another Step Against Litter

The Highway Department continues to generate more public support in its anti-litter campaign. Recently a Houston advertising company offered its support in a big way. T. J. Andrews, Manager of the Andrews Advertising Service, wrote:

"We were astonished to read where you quoted figures on the annual cost of cleaning the litter from Texas highways. The exact figures elude us, except that was more than one million dollars, but the impression remained and we began to wonder if we could help the situation.

"Enclosed is a photograph of one of our poster panels, with the message 'Please Don't Litter our Highways.' This is located on U.S. Highway 90, just outside of Katy, showing to traffic leaving Houston. Our company has purchased 50 of these posters, and within the next 30 days will have them displayed strategically throughout the area we serve.

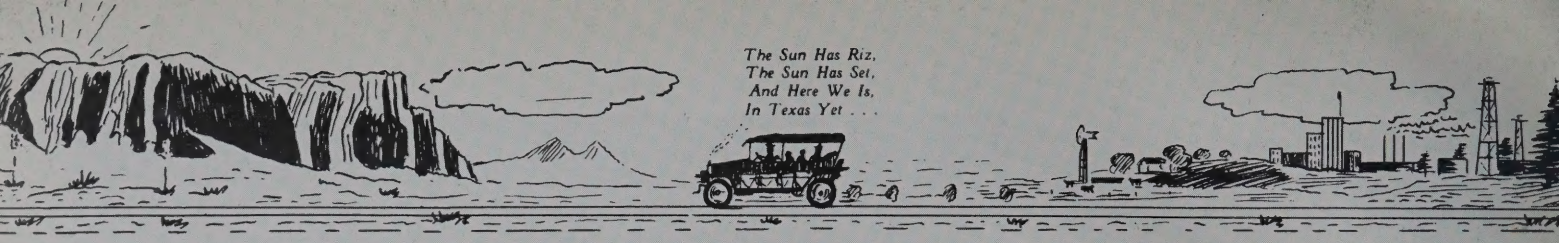
"Other members of the Outdoor Advertising Association of Texas have expressed interest in displaying these posters.

"We are very much interested in your reaction to this; we would be extremely pleased if the results could show a saving of our public funds; and would be willing to help promote a long-term campaign among our Association members."

The Highway Department wrote back, sending copies of its anti-litter literature and suggesting that the company might want to view the Department's new anti-litter film, "Money to Burn."

"We are very grateful for your support and the aid of any other members of your organization whom you can enlist in our seemingly never-ending battle," the Department spokesman wrote. "We would be pleased to provide artwork for our anti-litter symbol, the Litter Critter which appears on the Official State Highway Map, if you should desire it for future posters or other use."

The letter pointed out that an estimated $1½ million is spent annually to clean litter from the highways.



OVER THE HIGHWAYS

Comments . . . from the Traveling Public

• Our next-door neighbor is a student doctor who is a native Texan, and so is my husband. I was visiting our neighbor student's wife, and saw a book, brightly colored with "Texas" across the top, and I said "Oh, may I see it and could I borrow it to show to my husband." And our fine neighbor said yes. How we did enjoy it, so much so that we would surely appreciate a copy of it for our files.

As I am a student of our nation's history of covered wagon days, and the settling of our West, I have read several books on Texas, and Sam Houston, and some about Austin, but never have I seen such colorful pictures as in your "Today's Fun-Tier."

As we have no car and may not ever be able to travel in your great state, could you and would you please send us literature and pictures on your state. Even though I am a native daughter of the Golden West, the state of California, I feel like I am a Texan, too, as I married one. I wish that I could see the state and the town—Bryan—where my hubby was born. I hope and pray that someday a miracle will occur, and we can see Texas someday. From an "adopted" Texan,

Mrs. Marie A. Hopkins
Loma Linda, California

• If there is anyone over there in that horse country in Texas that would invite a little girl to spend a few days at their horse ranch, please remember me to them. I've heard there are some good-hearted Texans with a lot of southern hospitality and money.

Sylvia Hanwell
Shreveport, Louisiana

• I am writing for information on a baby prairie dog. I was just wondering if you would give away a baby one.

David Pless
Ransomville, New York

• Hello Everyone—I finished my 12,085-mile trip in 161 days in 31 states and my 20-year vacation in five months. Enjoyed trip by bike around USA. To Vermont, to Cape Cod to Florida to Fredricksburg, Texas, where trip ended. I'll make more trips by bike, there's lots of places to see in USA.

Gordon Young
Transcontinental Cyclist

• I am 12½ years old. I love horses and would like some information. Are there any wild horses such as mustangs in Texas that haven't been caught, and if there are can they be caught and kept for free or cost.

Steve Echols
Pasadena, Texas

• Roads best of all states. Roadside parks were superior. Your litter campaign must be producing results as we saw very little litter.

Ocean Springs, Mississippi

• My husband and I wish to thank those responsible for the abundant and helpful information sent to us in response to my inquiry about a winter vacation in Texas. I believe I addressed it to a chamber of commerce and received a wealth of literature from all over your state. It enabled us to see the different areas of interest in your state and plan our trip accordingly. We changed our minds as a result of your information and decided to file some of it away for a second trip, rather than to try to take it all in. We went to other places we learned of through you.

Everyone was most pleasant and helpful. We have a very favorable impression of Texas.

Mrs. Edward Latal
West Chicago, Ill.

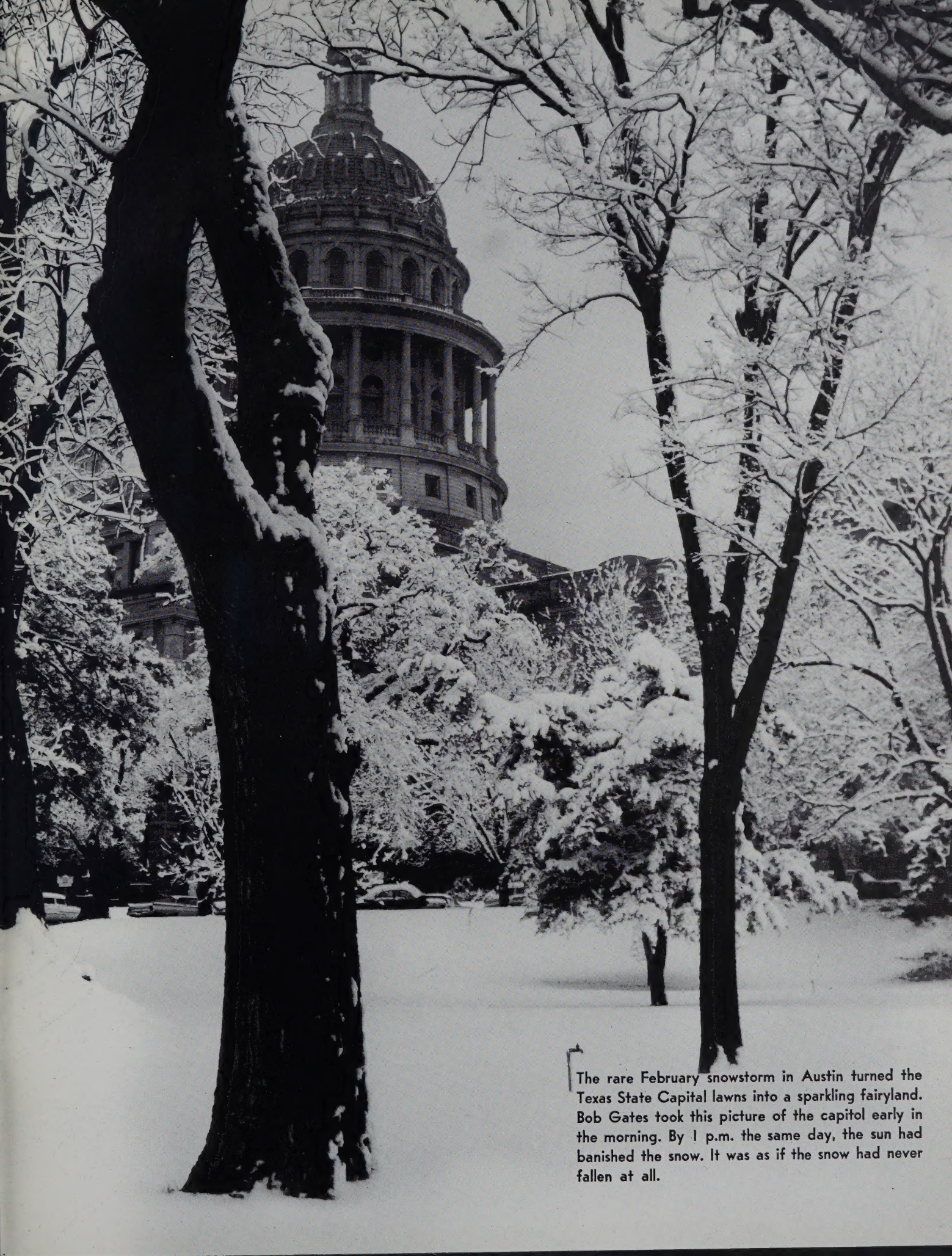
• One day last December my wife and I, with our children, left Dallas where we had been visiting our families for Christmas and began our trip back home to Florida. Just a couple miles east of Terrell on U.S. 80 the fuel pump on my car stopped working. In just a few minutes Mr. Jack Turner, of your Kaufman office, who happened to be cruising that area at the time stopped and offered his assistance. It turned out that he took me into Terrell to secure a new pump for my car and then stood by until it was fixed and we were able to resume our journey home.

I want to take this opportunity to thank Mr. Turner for his concern and help in this situation, and to commend the Texas Highway Department for having men like Mr. Turner working for them. You will never know what a relief it was to have help when it was needed.

Philip E. Grimmett Jr.
Chaplain, Captain, U.S.A.F.
Hurlburt Field, Florida

• Will you please send me some leaves from your state tree, the Pecan Tree. They will be put in my collection. Thank you.

Bernadine Vida
Detroit, Michigan



The rare February snowstorm in Austin turned the Texas State Capital lawns into a sparkling fairyland. Bob Gates took this picture of the capitol early in the morning. By 1 p.m. the same day, the sun had banished the snow. It was as if the snow had never fallen at all.

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Put on your rose-colored glasses so you can see this picture in color . . . . Wanda Smith, blonde, blue-eyed, garbed in a pink dress, surrounded by a sea of bluebonnets. Mrs. Smith is a secretary in the Travel and Information Division in Austin. The scene is just off S.H. 237 near Round Top.